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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------------------------------------------------------------------------------------|-------------|----------------------|-----------------------------|------------------------|
| 10/595,624 | 05/01/2006 | Christophe Colignon | LAV0313156 | 3686 |
| 29980 | 7590 | 09/18/2007 | | |
| NICOLAS E. SECKEL Patent Attorney 1250 Connecticut Avenue, NW Suite 700 WASHINGTON, DC 20036 | | | EXAMINER NGUYEN, TU MINH | |
| | | | ART UNIT 3748 | PAPER NUMBER |
| | | | MAIL DATE 09/18/2007 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|-------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/595,624 | Applicant(s) COLIGNON, CHRISTOPHE | |
| | Examiner Tu M. Nguyen | Art Unit 3748 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060501</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. An Applicant's Preliminary Amendment filed on May 1, 2006 has been entered. Claims 1-6 have been amended and are pending in this application.

Specification

2. The abstract of the disclosure is objected to because of the use of legal phrase "means" on lines 7-9, 13, 14, 16, 17, and 22. Correction is required. See MPEP § 608.01(b).
3. The disclosure is objected to because of the non-compliant Arrangement of the Specification. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)

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(f) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

4. Claims 2-3 are objected to because on line 2 of each claim, "comprise" should read --comprises--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1, 2, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtake et al. (6,931,842) in view of Kuentler et al. (6,594,990).**

Re claim 1, as shown in Figures 1-10, Ohtake et al. disclose a system for assisting the regeneration of depollution means (41), and integrated in an exhaust line (2) of a motor vehicle

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diesel engine (1), and in which the engine is associated with common rail means (16) for feeding fuel to the cylinders of the engine and adapted, at constant torque, to implement a strategy of regeneration by injecting fuel into the cylinders in at least one postinjection, the system comprising:

- detector means (step S3 in Figure 3) for detecting a request for regeneration and thus for postinjection;

- detector means (32, Figure 4) for detecting that the vehicle accelerator pedal is being raised;

- acquisition means (38) for acquiring the temperature downstream from the catalyst-forming means;

- determination means for determining, on the basis of the temperature, a maximum duration for applying postinjections during a stage in which the engine is returning to idling as a result of the accelerator pedal being raised (see step S22 with Yes answer, step S23 with No answer, steps S29-S30 with Yes answer, steps S33-S34, steps S35-S36 with No answer, step S31, step S41 with Yes answer, step S42, step S43 with Yes answer, and step S44; also see Figures 8-9 and lines 39-51 of column 9); and

- cutoff means (step S36 with Yes answer) for immediately cutting off the or each postinjection as soon as the duration of postinjection use has reached the predetermined maximum duration of application.

Ohtake et al., however, fail to disclose that the depollution means is associated with an oxidation catalyst-forming means.

As shown in Figure 1, Kuenstler et al. disclose a method for regenerating a diesel particulate filter (10). Also as shown in Figure 1, Kuentsler et al. teach that it is conventional in the art to include an oxidation catalyst (9) located upstream from the particulate filter (10) so that during a regeneration of the filter and when an operating temperature of the oxidation catalyst has been reached, a post fuel injection is made during an expansion stroke to provide unburned fuel to the oxidation catalyst so that the fuel is oxidized by the catalyst to raise an exhaust gas temperature. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the oxidation catalyst taught by Kuenstler et al. in the system of Ohtake et al., since the use thereof would have been routinely practiced by those with ordinary skill in the art to effectively remove particle matter in the exhaust gas.

Re claim 2, in the modified system of Ohtake et al., the depollution means comprises a particle filter (41).

Re claim 6, in the modified system of Ohtake et al., the engine is associated with a turbocharger (21).

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtake et al. in view of Kuentsler et al. as applied to claim 1 above, and further in view of Asanuma et al. (U.S. Patent Application 2002/0007629).

The modified system of Ohtake et al. discloses the invention as cited above, however, fails to disclose that the depollution means comprises a NO_x trap.

As shown in Figure 18, Asanuma et al. disclose a device for purifying an exhaust gas of a diesel internal combustion engine, comprising a particle filter (70). As depicted in Figure 22 and

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indicated in paragraphs 0091-0092, Asanuma et al. teach that it is conventional in the art to include a NOx trap and a noble metal catalyst on both sides of a partition wall (54) in the particle filter so that the filter is adapted to remove and purify harmful NOx emissions in the exhaust gas. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the particle filter taught by Asanuma et al. in the modified system of Ohtake et al., since the use thereof would have been routinely practiced by those with ordinary skill in the art to remove and purify harmful NOx and particulate matter emissions in an exhaust gas stream.

8. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtake et al. in view of Kuentsler et al. as applied to claim 1 above, and further in view of Rao (U.S. Patent 4,655,037).

Re claim 4, the modified system of Ohtake et al. discloses the invention as cited above, however, fails to disclose that the fuel includes an additive for becoming deposited together with the particles with which it is mixed on the depollution means in order to facilitate regeneration thereof.

Rao discloses a carbon ignition temperature depressing agent and a method of regenerating a particle filter utilizing the agent. As indicated on lines 30-42 of column 3 and line 58 of column 3 to line 14 of column 4, Rao teaches that it is conventional in the art to include an additive (metal oxide) in an engine fuel so that the additive is deposited together with the particles with which the additive is mixed on a particle filter in order to facilitate regeneration thereof by reducing an ignition temperature of the particles. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the

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additive taught by Rao in the modified system of Ohtake et al., since the use thereof would have been routinely practiced by those with ordinary skill in the art to save fuel or electricity by reducing an ignition temperature of the particles.

Re claim 5, in the modified system of Ohtake et al., as taught by Rao, the fuel includes an additive (metal oxide) forming a NO_x trap.

Prior Art

9. The IDS (PTO-1449) filed on May 1, 2006 has been considered. An initialized copy is attached hereto.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of four patents: Moraal et al. (U.S. Patent 6,574,956), Watanabe et al. (U.S. Patent 6,763,659), Nishimura et al. (U.S. Patent 7,021,050), and Nakano et al. (U.S. Patent 7,237,379) further disclose a state of the art.

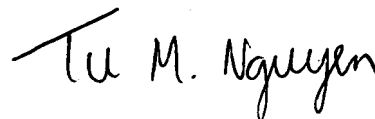
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Communication

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TMN

Tu M. Nguyen

September 15, 2007

Primary Examiner

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